

# GIS NEWS AND INFORMATION

June 1996 (No. 10)

*Dedicated to CDC/ATSDR scientific excellence and advancement in disease control and prevention using GIS*

**Selected Contents:** GIS session at ASA (p.1); Suggested CDC/ATSDR digital map library (p.3); GIS educational sources (p.6); GIS update from Guatemala (p.8); Latest developments on Census 2000 (p.11); Genetics initiative at NCHS (p.12); Staying current with DHHS (Section VI, starts p.12); June availability of *Health, U.S. 1995* (p.16).

## I. Public Health GIS Events

### \*ASA GIS and Mapping (August meetings)

Invited Paper Session “**Geographic Information Systems: New Approaches to Disease Surveillance and Analysis**,” Tuesday, August 6, 10:30 a.m.-12:20 p.m. [Section on Epidemiology]: (1) “Interactive Analysis of the Spatial Distribution of Disease Using a Geographic Information System” by **Owen Devine, Patrick Wall, Katey Durham, Steven Yoon, and Judith Qualters**, CDC; (2) “Water Quality and Cardiovascular Disease” by **Gerald Feder, Linda Pickle and Charles Croner**, USGS and CDC; (3) “Visualizing Geographic Data Using S-Plus” by **Daniel Carr**, George Mason U; Discussant: **Linda Pickle**, NCHS. [Editor: Abstracts of these three papers can be found on p.10].

Other Selected Topics (see also *Amstat News*, May, No. 231, or <<http://www.amstat.org/>>, for specific dates and times, as well as for a variety of papers not listed here but related to spatial modeling, environmental exposure and risk, clustering and density estimation): “Analysis of Mapped Mortality Data by Mixed Effects Models” by **Linda Pickle**; “Spacio-Temporal Hierarchical Modeling of Disease Rates” by **Lance Waller** et al; and posters, “Presentation of Data in Linked Attribute and Geographic Space” by **Anthony**

**Olsen** et al; “Atlas of United States Mortality” by **Linda Pickle** et al, and; “Application of a Weighted Headbanging Algorithm to Mortality Data” by **Michael Mungiole** et al.

### \*NCEH Lab-Epi GIS Forum

**T**he National Center for Environmental Health held a Lab-Epi GIS Forum on May 13, 1996. The purpose of the forum was to provide current GIS users with an opportunity to discuss their GIS work and share resources; and to educate persons interested in GIS about its potential uses for epidemiologic research within NCEH. The forum covered a range of topic areas and was well attended. **Steven Yoon**, a GIS consultant working at CDC, presented an overview of GIS and discussed some practical applications to environmental health research. **Paula Yoon** discussed a project which is under way in the Division of Birth Defects and Developmental Disabilities to map selected birth defects in metro Atlanta using MAPINFO. The birth defect cases and all live births in the study area will be mapped allowing the group to analyze rates and identify possible clusters. **Larry Killen**, a consultant from Orkand working at CDC, discussed sources of GIS data including the use of GPS units. Larry is currently working on a project which involves mapping private wells in the Midwest and studying levels of contamination in the wells. **Owen Devine** and **Patrick Wall**, of the Radiation Studies Branch, demonstrated a software they are developing to perform interactive statistical analysis of spatial data. The application, developed using a combination of the Delphi application builder and MAPINFO, allows interactive evaluation of hypotheses on the spatial distribution of disease risk from within a GIS environment. After the forum, a number of persons expressed interest in forming a GIS working group within

NCEH.

**\* University of Iowa Workshop  
on GIS and Public Health**

Report from **Fred Seitz**, NCHS: The May 16-18 workshop provided an excellent blend of lecture, multimedia presentation and hands-on experience for public health professionals new to and experienced with the use of maps and spatial analysis in the analysis and presentation of public health data. Professors Gerard Rushton, Mark Armstrong and two assistants provided brief lecture and multimedia overviews of topology, geocoding of data, TIGER and isopleth mapping. Through guided exercises using Maptitude, Surfer and several PL-1 programs, the participants constructed data bases which were used to map public health data. The workshop also included exercises in masking location to insure confidentiality and developing maps to analyze health service utilization. The workshop was offered twice in May at the University of Iowa campus in Iowa City. It may be offered again in the Fall. A CD-ROM containing some of the lecture material is available from G. Rushton <gerard-rushton@uiowa.edu>.

## **II. News from GIS USERS**

(Please communicate directly with colleagues on any issues)

### **A. General News**

1. From **John Mann**, ATSDR: For anyone working on sites or problems in Connecticut, the University of Connecticut has a GIS home page that makes the CT Department of Environmental Protection GIS files available for general use. The url for the home page is: <<http://magic.lib.uconn.edu/http/homepage.htm>>. I have been able to download the ARC/INFO coverages for the quad I need, unzip the coverages and import them into ARCVIEW for immediate use. In less than an hour, I was able to download, unzip and import

approximately five coverages. Those of you who know my limited computer abilities, realize that if I can do it, anybody can.

2. From **Russ Kirby**, UW-Madison Medical School: I have an application in ARC/INFO, housed at the University of Arkansas-Little Rock, with geocoded birth certificates for Pulaski County, AR resident live births (1985-1990; geocoding rate 93+%) with linked infant and child (to fourth birthday) certificate data, and linked birth defects registry, developmental disabilities registry data from the Arkansas Reproductive Health Monitoring System. While this project was funded through ATSDR, the dataset could be used for spatial statistical modeling, analysis of ecological correlates of adverse reproductive outcomes, and a variety of other studies.

3. From **Steve Campbell**, Baltimore City Health Department: I am still in search of an EpiMap version of census/zip code maps for Baltimore City. [Steve can be reached at (410)-396-1849 or 396-4466]

4. From **Tom Usselman**, National Academy of Sciences: The URL for the Mapping Science Committee's homepage and its possible Spatial Data and Health activity which is given in the referenced Spring Edition was slightly in error. The correct URL is <<http://www.nas.edu/cger/besr/msc.html>>

5. From **Robert Fagan**, EPO: Is anything being done on the release of Epi Map version 2? This is a fantastic product for computer assisted presentations of all types. If anyone has done something could they send me a copy?

### **B. Technical News**

6. From **Mark Papania**, NIP: (a) Do you know of anyone who would have a map of Mexico,

including state boundaries, in a format suitable for MapInfo or Altas GIS? [Editor: Mark has since located the files and shares the following information; Mark's suggestion for a CDC/ATSDR GIS map library repository is open to your thoughts and ideas]

The map files that I have, Mexico and Central America, came from WHO through PAHO (originally said to be developed by the CIA). I do not have the time to be the contact person for these maps. I would suggest that we set up a CDC/ATSDR map library somewhere, electronically available to all interested parties. If you can find out how we would arrange that and if there is storage space somewhere for it, I will inquire to PAHO about available maps. I know PAHO has maps, to the county level, for almost all of the Americas. And I know WHO has all of Africa. Let me know what you think. (b) Could anyone send me a copy of ocean.tab, for putting backgrounds behind MapInfo maps?

7. From **Mike Mungiole**, NCHS: I prepared a brief summary of ArcView v. 3.0 that ESRI claims will be available in the second quarter of this year. The information was obtained from ESRI's ARC NEWS, vol. 18, no. 1: In the next few weeks, ESRI's ArcView GIS Version 3.0 is expected to be available, and will contain some significant improvements for desktop mapping and GIS. This version will include two new advanced geographic analysis extensions, namely ArcView Spatial Analyst and ArcView Network Analyst. ArcView Spatial Analyst will contain new spatial data modeling and analysis features which allow the user to perform cell-based map analyses along with performing integrated raster-vector theme analyses. ArcView Network Analyst will allow the user to solve geographic network problems, including determining the most direct path between two points, obtaining the optimum route among many points, and defining specific locations based on travel time.

8. From **Bill Letson**, Indiana State Department of Health: I am a recent/new ArcView user, but I recently have had some difficulty which other users may find. To support the use of the ArcView software package ISDH purchased for my use a new computer. This machine is a Zenith Data Systems 100MHz Pentium with adequate RAM. The machine came with operating software installed. And the program software which I typically use was then installed. The problem occurred with attempts to close the ArcView application. All other applications could open and close with no ill effects. However, ArcView when closed would lock up the computer, and force a reboot. The error message delivered during the reboot process involved the extended memory manager. Calls to the machine manufacturer elicited the recommendation to reinstall the program. Several reinstallations did not resolve the issue. ESRI indicated that they had heard of the phenomena, but had not been able to replicate this on their machines. MIS here at ISDH helped to solve the problem, which all of us were finding baffling. The software was installed on other computers to see if the same response was obtained. Another computer which was identical to the computer at my desk, including date of shipment, suffered the same problem. But another computer which was received here at a different time, but identical in all other respects, did not have this problem. Deletion of windows and all application software, followed by the reinstallation of the various programs has solved the problem. If anyone has further questions, I would be happy to talk to them. If anyone else has had this problem and found a different solution, I would like to hear from them also. I can be reached via WONDER, or at 317/383-6207.

9. From **Charles Vitek**, NIP: My big project is research on the Russian diphtheria epidemic. There would seem to be some significant potential for using GIS-based analysis. My question is where

might I be able to find geographic boundary files and other data files for the former Soviet Union. I would think there would be extensive ones in the Defense Department channels but would be interested in any thoughts you had as to how to begin looking for them.

### C. Internet News

(New section on selected items picked up from Internet by GIS Users)

1. From **Tom Lacher**, PHPPO, Water Information on the Internet- the following items were taken from the Internet Newsbrief as published by the U.S. EPA Headquarters Library: **(a)** Access to GIS Spatial Data Sites <<http://www.epa.gov/docs/oppe/spatial.html>>. Maintained by EPA's Office of Policy, Planning and Evaluation, this site provides a connection to spatial data on the Web. More or less a directory of GIS information, links include government agencies, specific projects, state agencies, local groups, and various current resources. Beyond linking to specific sources, the site includes articles, software links and other tools for understanding GIS and spatial data relevant to EPA. **(b)** Center for Subsurface Modeling Support at website <<http://www.epa.gov/ada/csmos.html>>. "The Center for Subsurface Modeling Support, or CSMoS, provides a source for publicly available ground-water and vadose zone modeling software and services." The Center was established in 1989 in order to provide a focal point for the distribution of databases and models developed through both in-house and outside research activities. The Center also provides technical support for these models and databases, as well as a review of model applications at more than 100 hazardous waste sites. From this website, one can obtain information about the Center, including a brief history, a summary of its current projects, and an E-mail address for reaching the Center. Several software items related to the Center's research on Vadose Zone models are provided using an FTP link. In addition, user manuals and other types of documentation for these software products are

available from this same location. The Center also maintains a mailing list, and a form for joining this list is provided.

2. From **Arlene Siller**, NCHS: **(a)** Users may want to check out two friendly interactive map locating services: <<http://maps.yahoo.com/yahoo/>>; and also try <URL:<http://www.mapquest.com/>>. **(b)** Picked up submission to comp.infosystems on the topic 'Statistics and Statistical Graphics' <URL:<http://www.math.yorku.ca/SCS/StatResource.html>> This page provides a topic-based collection of available WWW resources for statistics, statistical graphics, and computation related to research, data analysis and teaching, now containing over 250 links. The following topic areas are represented: General Statistical Resources; York Statistical Resources; Statistical Associations; Statistics Departments and Groups; SAS; SPSS; LispStat; S Plus; Mathematica; Data Visualization; Statistical Graphics; Psychology; Psychometrics; Online courses; Online WWW statistics; Data; Categorical Data Analysis; Other Statistical Packages; and Unix. Source: Michael Friendly, Internet:[friendly@hotspur.sych.yorku.ca](mailto:friendly@hotspur.sych.yorku.ca), Psychology Department, York University, and **(c)** Geo/Map related from SASPAC-L: Although the formal announcement is still a week or so away, the MABLE/Geocorr geographic correspondence engine is now ready.

This application was first mentioned here last summer. In case you missed it or can't remember, this WWW application lets you specify various sets of geographic codes (such as counties, census tracts, ZIP codes, Congressional Districts, etc.) and to get reports/files back that define how these coverages relate to each other. For example, you can get a "ZIP to tract correlation list" for the Chicago PMSA that shows how each 5-digit ZIP in that universe relates to the census tracts that it intersects with. The URL's are: [www.oseda.missouri.edu/plue/geocorr](http://www.oseda.missouri.edu/plue/geocorr) and [www.ciesin.org:2222/index.html](http://www.ciesin.org:2222/index.html) (select geocorr from this page:

this will change to a direct, permanent URL next week when it becomes an "official" CIESIN production app.). These are mirrored sites, both running with a complete U.S. Mable database (during the test phases, we only ran a limited database here, but the folks at OSEDA have provided us with the storage and CPU cycles to run a full mirror now.) You can readily switch back and forth between the two from links at the top of the application pages (or at least you will after they change the CIESIN URL - right now our link has been set to point to the \*future\* address rather than the current.) We have a couple of features that we may not have talked about here before. We have managed to overcome the Bureau's incomplete block to PUMA correspondence files, so that we have every block in every state linked to both an A- and B-PUMA code (the geographic areas used on the 1990 Public User Microsample files - 5% and 1% samples, resp.) And we then went ahead and created an entire library of "correlation lists" -- linking the PUMA codes to 5 levels of geography for each of the 50 states and DC. We have not yet gone back and rechain all the PUMA polygons but that is in the queue. We are also working on the creation of complete and standard-extract stf3 files aggregated to the PUMA level. We have also added features relating to the census block internal point lat-long coordinates. You can specify the lat-long coordinates of a point and have the application either/or: -filter the blocks that go into the list generation by specifying a distance (radius) from your specified point (so you can ask to get all blocks within a 3-mile radius of any point you specify). -calculate the distance between the weighted centroid of the output areas and the specified point (lets you use the application to generate "population-weighted centroids"). Source: John Blodgett, Urban Information Center / Office of Computing, University of Missouri - St. Louis 8001 Natural Bridge Rd., St. Louis, MO 63121-4499 Phone: (314) 516-6014/6000 FAX: 516-6007 (d) The following services are provided

to you by the Socioeconomic Data and Applications Center (SEDAC) housed at the Consortium for International Earth Science Information Network (CIESIN). Please visit our web space at: CIESIN URL: <http://www.ciesin.org/> and SEDAC URL: <http://sedac.ciesin.org/>.

We are pleased to announce the release of the Demographic Data Viewer, an interactive mapping tool accessible via WWW browsers. This mapping tool enables users to select geographic areas, specify variables to map, specify map outlay parameters and color assignments. A map image is created on the fly for each query and a descriptive summary statistics report is provided along with the image. The tool can also be used to browse demographic data in tabular format. All products may be downloaded via the browsers upon creation. DDViewer is available via the public URL: <<http://sedac.ciesin.org/plue/ddviewer>>; Data: The boundary data was derived from the Bureau of the Census TIGER 1992 database. Boundaries are available for states, counties, census tracts, county subdivisions/minor civil divisions, and census blockgroups. One, or a multitude of counties (or entire states) may be defined as the area of interest. Demographic data available for mapping was derived from the Bureau of the Census STF3A 1990. Roughly 225 variables are selectable either for mapping purposes or can be printed in tabular reports. Map layout, colors, legends and titles can be customized by the user. A recoding option is provided enabling the creation of user defined variables; Functionality: DDViewer allows the user to \*create maps at a multitude of geographic resolutions; \*interpret the image using the statistical summary report; \*customize the layout; \*create tabular reports; \*refer to online help; \*create simple recodes of variables.

3 From **Mary Brown**, NIOSH: What education sources would you recommend to someone who only has the barest concept of GIS and would like to get up to speed enough to participate in some of

the projects mentioned in the newsletter? [Editor: Some of the following resources picked up from gis-l@urisa.org by **Mike Mungiole**, NCHS may help get you started] (a) Bill Thoen (bthoen@csn.net) wrote: This is a summary of responses I received to my query on the Usenet newsgroup comp.infosystems.gis about what is available on-line regarding courses in GIS. All the responses were most enthusiastic, but the general feeling was that there was still a lot of work to be done before this method of learning becomes truly viable. It was interesting to note how many responses came from people in business who would be interested in continuing their education this way if there were good courses available. However, judging by the information I've found, I suspect that there is a lot more happening here than people realize. Perhaps this summary will help bring some ideas and people together.

Among the URLs most often cited were Kingston University's program and the Geographer's Craft pages at the University of Texas at Austin. The UNIGIS program based in Hungary also received some multiple mentions. Bill Timmins <timminsb@aries.tucson.saic.com> offered information on good courses offered by mobile training services. Dawn Wright <dawn@dusk.geo.orst.edu> a professor at the department of Geosciences at Oregon State University is active in distance learning and GIS and has also nominated it as an educational research priority within the new University Consortium for Geographic Information Science. Her course in "Introduction to GIS" is large enough that it is broadcast live via the "Ed-Net" satellite system to students 50 miles away on the Oregon coast. She recommends software such as PowerPoint or Adobe Persuasion for preparing lectures for multimedia presentation. The special distance learning classrooms at Oregon state also allow for real-time connection to the web while in class as well. Marcus Blake <marcus@geog.leeds.ac.uk> provided some good high-grade URLs and also

maintains a collection of education resource sites.

Steve Morris <smorris@library.berkeley.edu> has a rather good list of GIS resources with a section called "GIS Tools and Training" that has some interesting references to on-line tutorials. A couple of people suggested the Inktomi and AltaVista search engines, and offered hints on how to use them effectively (these two are probably among the best on the net these days for ad hoc queries). Inktomi was fast and seemed to have good depth, but it cannot handle multi-word terms like "distance learning" (as opposed to "distance" and "learning") or boolean searches. AltaVista's advanced query option can handle both of these problems. When given +distance +learning +GIS, Inktomi found 430 hits (Only the first 30 or so were useful), and when I tried AltaVista advanced query with (distance near (education or learning)) near (GIS or "geographic information systems"), I got 57 fairly good hits.

Here's another little tidbit to be wary of when querying search engines. The acronym "GIS" in the context of "distance learning" also means "Guided Individual Study." According the League of Real Surveyors, it also means "Get It Surveyed" (haha... cute, guys). This was kind of a reconnaissance trip through the net, and I only passed through everything quickly. I didn't search on terms like "Geomatics," "Geographic," "Collaborative," "Correspondence," etc., so I'm sure I've missed some resources. What follows is a long list of URLs that may be of interest to anyone else interested in this topic. If I missed anything good, particularly any actual online courses offered in GIS subjects, please let me know. I'll post this and any new pointers I find on my web site at [http://www.gisnet.com/gis/GIS\\_distance\\_learning.html](http://www.gisnet.com/gis/GIS_distance_learning.html) for future reference.

(b) The "1996 Directory of Academic GIS Education" is a compilation of data on 828 academic departments who are currently teaching, planning to teach, known to be teaching, or believed to be teaching GIS courses. Data for the

"Directory" was collected in 1995 by means of a questionnaire sent to nearly 4,000 departments around the world. Information on the name and address of the departments, contact person(s), list of GIS and related courses, and list of GIS software available for student use were compiled for the departments included in the directory. Departments surveyed for the 1996 "Directory" included: agronomy, anthropology/archeology, biology/environmental science, business, computer science/mathematics, engineering (civil and other), forestry, geography, geoscience, GIS/geomatics/geoinformatics, health/epidemiology, landscape architecture, other (miscellaneous), real estate, surveying, and urban and regional planning. This is the only book devoted to providing comprehensive, detailed information on academic GIS education. The "1996 Directory of Academic GIS Education" has been published by the Kendall/Hunt Publishing Company (Kendall/Hunt Publishing Co., 4050 Westmark Drive, P.O. Box 1840, Dubuque, Iowa 52004-1840, or call (800) 228-0810; The ISBN number for the "Directory" is 0-7872-2149-X. Other questions regarding the directory may be addressed to the principal author (and CDC/ATSDR GIS User!), **John M. Morgan III**, Department of Geography and Environmental Planning, Towson State University, Baltimore, Maryland 21204-7097, (410) 830-2964, (410) 830-3888 (FAX), e7g4mor@toe.towson. Edu.

### III. GIS Outreach

From Steven Spaeth, NIOSH: I have been asked to look into GIS as a possible tool for investigating Indoor Air Quality problems. We have a tangle of data from a large hospital including dates of remodeling, department locations and relocations, personnel assignments within the building and health problems. The researcher would like to see this data graphically, and was wondering if GIS would be the way to go. Although I'm on your GIS

interest group E-mail list, I don't know much about GIS. I'm concerned about the geographic paradigm scaling down to the size of a single building, and wondering if architectural CAD or other graphical software might be more appropriate. Any thoughts? Thanks.

Response from **Morris Maslia**, ATSDR: I think you are probably beyond the limits of a GIS and need to look at a CAD program that maps/graphs objects in 2-d X-Y coordinates. At the scale you are dealing with (engineering scales), there would need to be so many decimal points on any geographic data (state plane, UTM, or lat/long) that roundoff error would be your undoing.

From Cathy Cubbin, Intern, NCHS: Just wanted to ask a couple of quick questions about mapping. My job in Baltimore involves evaluating a lead poisoning prevention program. What I'd like to do is geocode the addresses where kids are poisoned and the addresses where kids relocate and create point maps of Baltimore City. I also have quite a bit of social and economic data by tract. I want to underlie the point maps with thematic maps by census tract of the social/economic data. Do you know if it's possible to create those maps on the Internet or with EpiMap? I have MapInfo software at home but don't have a base map of Baltimore. Alternatively, can I download a base map of Baltimore City that I can use with my MapInfo software? Thanks for your help.

Responses from (1) **Jay Devasundaram**, State Department of Health, Baltimore: I have street maps of Baltimore in ArcView format which I think can be exported into MIFSAHAPE (MapInfo format). Perhaps I could get in touch with Cathy and take it from there. I can even offer to put her data on ArcView and display it that way, and (2) **Steve Campbell**, Baltimore City Health Department: I guess from what you wrote that you've probably got the Planning Department's

Census Tract information, by census tract. Probably what you want to do is make sure you've got accurate street address information on the houses where kids were poisoned. Then either run it through a translation program (MapInfo with the proper Baltimore City tiger or equivalent GIS files) or go through the census tract map and match street address to tract information by hand. After that, unless you've got the Metropolitan Council's exact Baltimore City Tiger map suitable for MapInfo or Arcview, or the equivalent version from MapInfo or Arcview, I'm afraid you're stuck. I've been trying to get a decent census tract map for Epi-Map, but the Metro Council got burned by a private contractor two years ago, and they won't let the information out without a fairly major restrictive clause. The Metro Council's map is supposed to be the best, since it's updated yearly. You can buy their map for Balto City for about \$700, and it'll work for MapInfo or Arcview. I have a possible contact at Hopkins Homewood campus who also has the maps, but again it'll cost you at least \$200. As for EpiMap, you can create maps using it, but it's an incredibly tedious process. I'm about to start trying to do that, but once you realize that you're doing drawing dot-by-dot, you begin to realize just how much you don't want to do this. I don't know whether you can create them on the Internet. I suspect that you could scan the maps into memory, then use a graphics translation program to map out the coordinates of the boundaries of the tracts, but I don't have either the scanner or the translation program to test my theory. I think that there may be a way to access Tiger data on the census web site, but all I've managed to get out of it is census information, in summary format.

#### **IV. Special Field Report: GIS Activities at the NCID field station in Guatemala City**

**Allen Hightower, NCID**

(New section-submissions are open to all)

**N**CID, through the Division of Parasitic Diseases, operates the Medical Entomology Research and Training Unit (MERTU) in Guatemala City. MERTU, which employs about 30 people, is located on the campus of the University de Valle, a modern university with approximately 2,000 students. Areas of research expertise at MERTU include onchocerciasis (river blindness), leishmaniasis, malaria, Chagas' Disease, geohelminths, and GIS. There are 4 GIS professionals on staff who each are skilled in several GIS packages: PC ArcInfo, Arcview, Atlas GIS (DOS and Windows), and MapInfo. The computer center is well equipped with modern computer equipment: there are 4 pentium computers (90 Mhz or better, minimum of 16 Mb of RAM, 1+ Gig Hard drives, six 486 computers, two digitizing tables (4' x 6'), GPS units, an E-size plotter (HP 650C), an HP scanner, laser printers, and other peripherals. All are hooked up to a token-ring based Novell network. Within the last month, the 50 node network at MERTU was connected via fiber optic cable to the Internet. As I left a couple of weeks ago, the GIS staff was eagerly exploring the World Wide Web, conducting searches, and using FTP to download data and map files. MERTU is now truly in the 90's. **Rodney Murray**, the senior LAN specialist for NCID OD deserves special recognition for his good work in the installation of the network, the fiber optic cable, and the Internet.

The activities of the GIS team are varied. They provide GIS and mapping support for OEPA, the Onchocerciasis Elimination Program of the Americas. This work includes extensive digitizing work for the member Meso and South American countries, importing of maps from other GIS products, maintenance of surveillance databases, and conducting workshops and training as required. For the Guatemalan Oncho program, the GIS database consists primarily of a village-level case counts, status of prophylactic treatment program (Ivermectin), location, and altitude. The



endemic area is defined as the union of all 5 km circular buffer zones encompassing all endemic villages. Digitizing work is performed with Atlas GIS-DOS, with mapping and GIS work being done using Atlas GIS/Windows, the standard product of OEPA. MERTU has also assisted the Carter Center and the Guinea Worm Eradication Effort by rapidly digitizing a map of Southern Sudan with village locations (when known) and associated counts. As with UNICEF's Guinea Worm GIS efforts, this work is also done with Atlas GIS. Other mapping and GIS work has also been done for the River Blindness Foundation, the NCID Kenya field station, the government of Guatemala, and WHO, to mention a few. Services of the GIS team at MERTU are available on a contractual basis, at most cost-effective rates, e.g., through the University.

Recall that last August, MERTU was the site of a two week GIS workshop, sponsored by WHO-TDR-RSG, focusing on Atlas GIS (DOS), Atlas Import-Export, Arcview 2.1 (taught by ESRI personnel), and an overview of remote sensing and satellite image applications to public health (taught by NASA - CHAART personnel). MERTU has a computer classroom furnished with 15 networked 386 class computers (hence the focus on Atlas GIS DOS). When necessary, 486 and pentium computers are borrowed from MERTU staff when applications classes demand higher level computers. Teams of two or more research professionals from nine Central and South American countries, chosen on the basis of project proposals, attended the course and received copies of Atlas GIS, Import-Export, ArcView 2.1, EpiMap, Atlas GIS macros and scripts to accomplish popular tasks, a digitizing tablet, a GPS unit, and complete notes for the course.

### V. Public Health GIS Literature

(This section may include literature citations, abstracts of papers or reports, and the availability of related GIS and public health material;

submissions are open to all)

### ASA GIS Session Abstracts

(1) Interactive Spatial Analysis of Disease Using a GIS. **Owen Devine, Patrick Wall, Katey Durham, Steven Yoon, and Judith Qualters:** In this session, we will illustrate the use of a combination of application building and desktop GIS software to form a tool for interactive map-based analysis of the spatial distribution of disease risk. The presented software takes full advantage of the capabilities for spatial data manipulation inherent in the GIS but adds the ability to seamlessly develop and evaluate hypotheses on the spatial distribution of disease risk using a suite of spatial analysis approaches.

(2) Water Quality and Cardiovascular Disease by **Gerald Feder, Charles Croner and Linda Pickle:** The purpose of this paper is to make known the availability of national water quality data in the United States for possible epidemiologic study. A highly desirable factor in epidemiological studies is to obtain water consumption data for both exposed and unexposed populations, with corresponding health outcome measures. However, in the absence of data at the individual level, regional or ecologic studies based on water quality measurements and vital statistics have merit for hypothesis development (Hopenhayn-Rich, *AJE*, 1996). An illustration of mapping magnesium quantities in U.S. drinking water data and the potential for linkage of these data to ischemic heart disease is included.

(3) Visualizing Geographic Data Using S-Plus by **Daniel Carr:** This talk describes the production of choropleth map and plots of summary statistics to facilitate map interpretation and comparison. The choropleth map variations include smooth and residual plots. The summary statistic plots, while familiar in concept, involve design modifications to save space and accentuate selected distributional features. An implementation in S-Plus provides point and click map smoothing and emulates

selected GIS capabilities. Examples emphasize U.S. cancer mortality maps. The database menu provides selection by sex, race, decade, cancer site, and geographic region resolution. Menus and widgets control the type of map, such as a smoothed hexagon mosaic map, and loess related smoothing parameters. Window options include point and click queries to obtain regional values, window retention for comparison purposes and conversion to quality postscript using screen colors. The point and click mapping serves as a helpful teaching tool in an exploratory data analysis class. Comparison of smooths and original choropleth maps reveal smoothing artifacts, especially at map edges. This motivates the study of additional smoothing methods. Map and summary statistic comparisons based on sex, race, decade, cancer site and geographic resolution can be very instructive about cancer rates and generate hypotheses for investigation.

**Report Abstract: Lance A. Waller and Robert B. McMaster** (1996). Geographic information systems and public health surveillance. University of Minnesota, Division of Biostatistics Research Report 96-003. Public health disease surveillance includes the monitoring of incident disease cases in order to detect geographic and/or temporal trends. One enhances the value of surveillance with respect to a particular disease by incorporating available data on the population at risk regarding various risk factors associated with the disease. Geographic Information Systems (GIS's) allow researchers to easily merge spatially-referenced data including those collected and stored by different agencies and organizations. GIS's may be used in disease surveillance to standardize populations at risk in order to adjust for possible confounding variables. We review basic issues and concepts associated with disease surveillance and outline some questions of public health interest. We provide guidelines for the effective use of GIS in public health surveillance. The methods are

illustrated by incorporating indirect standardization to refine results from a study involving leukemia incidence around hazardous waste sites in upstate New York. [**Editor:** This report is available from Lance Waller, Division of Biostatistics, Box 303 Mayo Building, 420 Delaware Street SE, Minneapolis, MN 55455 <lance@muskie.biostat.umn.edu>]

## VI. Attachments-Related Census and DHHS Developments

**A. Update on Census 2000** (**Editor:** I prepared the following summary based on a report "Census 2000: Will You Recognize an Old Friend?", by Martha Riche and Robert Marx, Bureau of the Census, presented to the Work Session on Geographic Information Systems, Conference of European Statisticians, Statistical Commission and Economic Commission for Europe, Arlington, VA, April 1996):

**P**lans are in full swing for the 22nd decennial census of the U.S. and its territories. As you know, Census 2000 will serve as the basis to reapportion Congressional representation and to define congressional, state and local legislative districts. The census is also the basis for the distribution of more than \$100 billion annually to states, and local and tribal governments, by the Federal government. Despite missing about 5 million persons in 1990, the U.S. census topped all countries with 98 percent of the population. The statistical dilemma was that differentials of those missing were among racial and ethnic groups, e.g., 12.2 percent Native Americans living on reservations and 4.5 percent of African Americans. Additionally, the costs of up to six revisits to try to gain response were extremely high. This undercount issue, incidentally, was just settled in the Supreme Court where it was decided to officially use the 1990 undercount figures and not the later corrected

figures. Thus, Census has been busy to develop strategies to avoid a similar situation in 2000.

Thanks to 1994 legislation, Census can now work with designated local and tribal representatives to develop accurate address lists needed for Census 2000. This will avoid post-census court litigations, ensure an improved Master Address File (MAF), and improve local participation. More than 2,800 tribal, state, regional, and local agencies have agreed to assist. The same legislation also directs the U.S. Postal Service (USPS) to share its address information with the Census Bureau; besides developing a more accurate MAF with USPS address lists, Census will benefit greatly from USPS letter carrier information about vacant and no longer existing housing units on carrier routes. The costs of revisiting vacant addresses, previously borne by Census, will be eliminated. And, in terms of private sector participation, the Census Bureau will depend more on vendors for data processing, advertising and promotional services.

The Census Bureau must find ways to make it simpler, less expensive and more accurate to execute Census 2000. "User-friendly" form designs are being developed in the private sector, including short and long-form packages. In 1990, the form had to find the respondent; in Census 2000, supplemental ways will be used to put blank forms in a variety of languages and in post offices, convenience stores, malls, civic and community centers, schools and other public places.

There will be dramatic changes in technology for Census 2000- no more microfilm and related computer files, and reduced data keying through "optical character recognition." Forms will be digitally scanned, eliminating photographic film and its processing. Computer software is being designed to detect duplication of forms resulting from the new approach to distributing forms. Much of the technology will be contracted saving the Census Bureau expenditures for future outdated equipment. Census is additionally developing a

new Data Access and Dissemination System (DADS) to curtail printed reports and increase electronic accessibility for custom data tabulations.

To address nonresponse, a previous source of high costs, Census will conduct a scientific sample of nonresponding households. The 1995 Census Test of procedures has been successful and will lead in 2000 to a less expensive and more accurate, e.g., one number, census. The sampling of nonrespondents has led to reduced followup workloads. A second sample survey procedure, on data quality (the Integrated Coverage Measurement or ICM), showed that followup field interviews on the test sample, using laptops, provided real time matching and significantly reduced the time to conduct quality control procedures on the original estimates. Census is evaluating the impact of the ICM on its contribution to reducing the differential estimates in 1990.

[**Editor: Martha Riche** is Director, U.S. Bureau of the Census. **Bob Marx** is Associate Director, Decennial Census. If anyone can lead the Census Bureau through the challenges of providing "one set of numbers" to the President by December 31, 2000, I believe Bob Marx, geographer colleague, friend, and architect of TIGER, can do it. My best wishes for success are extended to Bob]

B. April 9, 1996 notice on genetics initiative circulated to NCHS staff by Jack Anderson, Acting Director: Genetics testing is becoming increasingly important as a public health issue. NCHS has the unique opportunity to be actively involved in this growing field. As part of the extensive phlebotomy protocol of NHANES III, a small sample of blood was collected that could be used for the analysis of DNA. These samples were processed in the Environmental Health Laboratory of NCEH, and to date, immortalized cell lines have been obtained from a majority of the samples. There are many ways that this resource can be used but there are also many complexities and difficulties in making full use of the data base, including issues of

informed consent of the NHANES III respondents.

Activities will also require a high degree of collaboration throughout NCHS, CDC and the Department. Clearly the DHES and NCEH staff that have brought the project to the point from which this Initiative is to be launched will need to continue their involvement. Given the complexities involved, I feel that it would be most efficient to start a Genetics Initiative to highlight this activity to be housed in the Office of the Center Director with the full support of that Office. I have asked Diane Wagener to head this initiative. Diane has a Ph.D. from Stanford University in Genetics, is well respected in that field and can provide the leadership that this initiative will need. I ask that you all give her your support should she call upon you. Diane will also continue to handle her current responsibilities with OAEHP as she takes on this additional responsibility.

C. October 24-26, 1995 meeting of the National Committee on Vital and Health Statistics, Washington, D.C.: **UPDATE ON DEPARTMENTAL (DHHS) DATA ACTIVITIES**

Mr. Ebeler noted that he and others from the Department had met with the Executive Subcommittee in August to discuss these subjects. The HHS Data Council (which he co-Chairs currently with the Administrator of HCFA) is a product of the Vice President's Reinventing Government (REGO) initiative, bringing together agency heads and staff component heads to coordinate the Department's data activities. He described the Council, which has been functioning since early September, as "an internal counterpart to the functions that you perform as an external advisory committee."

The Council's short-term agenda includes taking action on telemedicine, health information for consumers, privacy, and standards initiatives. The Council is also overseeing data integration, a process greatly complicated by lack of

Congressional support for many administration priorities and plans. Mr. Ebeler noted that unlike the fate of Medicare and Medicaid, the threats to many other important aspects of the President's budget have not received media attention.

The final activity is working out the new roles of NCVHS, a process in which Mr. Ebeler said Ms. Jones has been very active. He referred the group to the revised draft charter, the final version of which will be published in the *Federal Register*, with requests for nominations. The Executive Subcommittee has already been asked to recommend possible nominees. The Department's goal is to continue and enhance its partnership with the National Committee. It will be part of a "three-way equation" that also includes collaboration with "other external groups" that have expertise in specific areas.

Ms. Jones asked about one of these groups, Dr. Koop's organization. Mr. Ebeler said the Council has been in contact with this group, asking it to suggest possible NCVHS nominees as well as agenda items for the Council. Ms. Jones explained that the Department of Commerce has given the Koop Foundation and/or the Koop Institute \$40 million to look at development of computerized patient records, telemedicine, data standards and privacy. What remains unclear is the relationship of these information activities to those of the Department. Mike McDonald is the lead staff person for the Koop Foundation, and also works with the IEEE's Medical Policy Committee. Mr. Scanlon commented that many organizations share the concerns about roles and redundancy. The Department is working on how to relate to this and other external groups, including sending representatives to the groups, bringing back information, and defining what the Department and the groups need from each other.

In regard to the Council's agenda, Dr. Iezzoni urged that it give priority to facilitating research and removing impediments to getting data. It can take six to 12 months for AHCPR-

funded researchers to get permission through AHCPR to acquire data from HCFA, despite an interagency agreement to facilitate this very thing. She asked whether the Council had plans to coordinate activities between and within agencies, and offered another example involving the obstacles to getting permission to use MEDPAR data. The point, she said, is that these personal experiences reflect those of many other investigators, and point to the need for coordination of agencies' day to day data activities. This is especially critical in this time of diminishing resources. Dr. Schwartz remarked that facilitating data sharing and resolving disputes would be one function of a proposed privacy advocate. Mr. Ebeler said he would look into the issues Dr. Iezzoni had called attention to.

Dr. Starfield echoed Dr. Iezzoni's concerns, citing the number of uncoordinated surveys on children. She urged that such coordination be a focus of the Data Council, an effort that could save a lot of money.

Ms. Jones shared comments she has heard from other Committee members. While the administration has been preoccupied with health care reform, survey consolidation, government reinvention, and whether or not to create two advisory bodies, there has been a sea change in attitudes about the role of the federal government, as demonstrated by the current mood in Congress. Private sector organizations and the states are in the ascendancy. As a result, the first order of business for the Department is to consider the implications of these sea changes for its activities -- e.g., the maintenance of national statistical systems, and relationships to private sector organizations.

The Department is on the right track with the Data Council, she said, but there is a lot of confusion about what the Council is doing. Some people were upset that the Committee's notice to the field about core data elements coincided with a notice from HCFA about McData--and this at a

time when HCFA's responsibility for monitoring Medicaid is in question. There is not yet "a voice to the field that they can understand," one that makes clear what the different arms of government are doing. Ms. Jones expressed hope the Department could communicate its vision for data activities and for its own role, along with its understanding of the field's needs.

Ms. Jones explained that with the strong momentum toward a fully computerized environment, people in the field are worried about a proliferation of data standards activities and about the possible domination of that process by some interests while others are completely unrepresented e.g., public health departments. She urged that the Department and the Committee not spend too much time and energy "figuring out what is a Data Policy Council and what should be our charge" while other efforts are proliferating and people are getting more confused and frustrated.

Returning to the earlier discussion of data coordination, Dr. Kasper urged the Data Council to give priority to assessing how well current information collection and public health surveys will serve the nation in the face of the changes being imposed by Congress. Ms. Jones added that the public will look to government for answers to such questions as what impact the loss of insurance coverage is having on the health status of millions of Americans. Mr. Ebeler said a lot of such work is already underway, "but we need your pressure to keep us doing this." Ms. Jones called for "a fundamental reorientation" in which the Department sees its advisory committee not as "an enemy," but as "a vehicle and a friend who can reach out and get you the information you want."

Returning to the matter of staffing, Dr. Zill made the following motion: "That we request that the draft charter be altered to pick up the sentence of the old charter: 'Management and support services shall be provided by the National Center for Health Statistics, Centers for Disease Control and Prevention,' and merge that into the existing

charter, with additional professional scientific and technical staff support being provided by all agencies of the Department, and keeping the sentence, "The Data Council may establish inter-agency and inter-departmental issues, specific working groups to provide staff support to the Committee." Mr. Steinwald seconded the motion.

Some members responded that staffing should reflect the fact that the Committee reports to the Secretary. Dr. Zill stressed two reasons for his motion -- the need for continuity and ongoing support by expert professionals, and the fact that NCHS has been and will continue to be the central HHS agency for health statistics.

It was noted that the charter must be finalized quickly. At Ms. Ganzer's urging, the group decided to make the minimal necessary changes and move onto the Committee's work plan. After further discussion, Dr. Zill accepted an amendment by Dr. Ashley, substituting for the underlined words in the original motion the following: "An entity designated by the Secretary shall have the lead responsibility for providing management support." The Committee passed the motion, as amended. Following further discussion, Dr. Starfield accepted the following amendment: "The Executive Secretary of the Data Council shall represent the Data Council at all meetings of this Committee and shall carry the thrust of its deliberations back to the Data Council." The amended motion was approved.

Turning to the Committee's work plan, Ms. Jones said one priority would be the core data element project; another will be looking at data standardization efforts and where NCVHS and the Department should fit in them. She said she would propose that HHS develop a secretariat function to ensure that voices from public health -- e.g., state and county public health departments, community health centers, mental health centers, Title 10 clinics -- are heard in the data standards process. Only the federal government can accomplish this.

Dr. Zill suggested that the Committee study

whether the nation has an adequate statistical system to monitor, over the next decade, the effects of the changes Congress is putting in place on various populations' health status and on the health care delivery system. The Committee should evaluate what is happening in "the new federal government" as well as the efforts of foundations and private associations. Ms. Jones agreed, and suggested getting reports on the Robert Wood Johnson Foundation's tracking program and on Congressional efforts to build reporting requirements into block grants. Another focus of study should be the impact of severing the Social Security Administration from the Department. Other issues: the applicability of current reporting systems, given the growth of managed care, and assessing the work on outcomes.

Ms. Jones offered the following tentative list of future agenda items for the Committee:

- ! Write up the core data elements project, to inform the Department about interest in standardization for core data elements.
- ! Look at the growth of multiple data standards organizations and their perceived need for better coordination.
- ! Look at the shift of responsibilities to state and local levels, and its implications for a refined data standards effort.
- ! Look at the growth of multiple organizations developing outcomes measures for managed care, and look at the linkages.
- ! Look at the import, for development of data standardization and true information systems, of the growing numbers of people without any system of care or health insurance, and the implications for the nation's capacity to assess health and health status.

Other members and staff added the following items:

- ! Look at the country's state of data preparedness to evaluate the changes in programs and health care delivery, particularly for vulnerable

populations, including:

- ! The capacity for state-level estimates;
- ! The viability of the vital statistics system;
- ! The success of the survey integration effort.
- ! Review classification systems issues.
- ! Consider the division of responsibility for data standardization across departments, with NIST, Commerce and others.
- ! Define what data standardization is all about, what questions are to be answered, the purpose of the system.

#### Subcommittee on Medical Classification Systems

They also received an update from Amy Blum of NCHS on the project to evaluate ICD-10 and the transition from ICD-9. An executive summary report will be released around the end of the year, although the ICD-10 itself will not yet be in the public domain. A clinical modification of ICD-10 for morbidity application is being recommended by the evaluation panel. It was produced as part of the evaluation effort. NCHS is working with HCFA on implementation issues, and there will be a coordination and maintenance function.

#### **FUTURE PLANS FOR NCHS VITAL STATISTICS PROGRAM**

Ms. Jones welcomed Mary Anne Freedman, Director of the Division of Vital Statistics at NCHS. Ms. Freedman observed that although the vital statistics system in this country has been fairly stable for many years, the Division of Vital Statistics is now in a state of transition and facing major challenges. It has experienced a 25 percent reduction in staffing in the last two years as a result of budget cuts and hiring freezes. Now, it is setting priorities to ensure the future of the vital statistics system.

The Division is being reorganized and its operations streamlined. It is seeking to improve the timeliness of data release and the way data are distributed. In the first area, there are efforts, in

conjunction with the state association, to improve the flow of birth and death data. Beginning with 1995 data, NCHS will release estimates from the vital statistics system based on preliminary data receipts. This will provide users with more timely vital statistics data. Ms. Freedman noted that this is a big change for NCHS and for the Division of Vital Statistics, and that it involves a tradeoff: in the short term, the data will have a slightly lower quality; but they will also have greater utility.

In respect to data dissemination, NCHS is moving from a print orientation to an electronic one. It will continue to publish reports, but they will be fewer in number and there will be more of a dependence on electronic means of getting out information. Linked birth-infant death files are now released on CD-ROM. CD-ROMs of the multiple cause-of-death file and the natality file are also in preparation. NCHS has been using the Internet more, and it has a home page. This new orientation has led to new thinking about the design of reports, to take full advantage of electronic transmission.

Ms. Freedman noted that the vital statistics system is a collaborative effort between NCHS and the states. NCVHS member George Van Amberg has been a key player. One collaborative effort involves automating vital records all the way from the source to the distribution point. The design of an automated system is being guided by a steering committee with broad representation from the state agencies and organizations such as the American Medical Association and the American Hospital Association. The committee is looking at death registration, and has been meeting for about a year. An interim report is expected next spring. NCHS is also collaborating with the states on the process used to determine the content of the national vital statistics system and the distribution of funding.

Another area of major activity is implementing ICD-10 for mortality. Ms. Freedman noted that it was clear at the recent WHO Collaborating Centers heads meeting in Australia

that many countries look to the U.S. for leadership in the use of ICD-10, especially for mortality. They are waiting to see how we handle the conversion so they can follow. Implementation is expected to be complete in 1998, and involves a number of technical activities. There is an effort to make the transition as "transparent" to the states as possible by use of a computer program that codes to both classification systems.

### **HEALTH, U.S. UPDATE**

Dr. Prager reported that in November, Committee members will receive a draft copy of *Health, U.S., 1995*, which is scheduled for release in June 1996. She described some of this edition's innovations, including the use of tabs to mark sections of the book. The chartbook section of *Health, U.S., 1995* focuses on women's health and will again be published as a separate publication. *Health, U.S.* is available on the Internet and, with other NCHS reports, on CD-ROM. Dr. Prager said that she had been unable to act on the Committee's recommendation about using WIC data for the nutrition tables, because they do not supply the necessary trend data.

*Health, U.S., 1995* has 148 detailed tables, including 12 new and redesigned ones. New topics include trends in the use of mammography for women age 40 and over, home health care and hospice patients, ambulatory visits, utilization of dental care by SES and race, and a new table on exposures to air pollution by race and Hispanic origin that addresses an environmental justice issue.

Planning for the 1996 edition, which will be released in May 1997, is in its initial stages. The chartbook theme will be injuries, and because injury is the leading cause of death for children, relatively more attention will be paid to ages one to 24 and to the elderly.

Dr. Thompson was the first of many Committee members to praise the quality of *Health, U.S.* A variety of detail questions were

asked and answered. Dr. Zill encouraged collaboration between Dr. Prager's office and those responsible for the National Health Interview Survey and other surveys around the potential use of data for indicator series, to ensure consistency and to think about useful indexes combining indicators such as several risk behaviors. Dr. Prager said her staff is closely involved in the NHIS redesign. However, they do not take the analytic approach to the data implied by Dr. Zill's suggestion, but rather present straightforward data tabulations. Dr. Ashley joined the chorus of commendations, and expressed satisfaction about the focus on uninsured and underinsured populations. He asserted that because these populations are the source of higher morbidity and mortality rates, they should be a particular focus.

### **HCFA UPDATE ON McDATA PROJECT**

Ms. Jones introduced Rick Friedman, Director of the Office of Information Systems and Data Analysis in the Medicaid Bureau, and co-chair of the Medicaid/Medicare Common Data Initiative (McData).

He explained that as states have moved toward managed care for Medicaid and Medicare, data collection has lacked uniformity and, in some cases, critical content such as on utilization. In response, the Office of Managed Care launched a process 18 months ago to identify what it considered critical encounter data. The process resulted in a draft document that was recently circulated in the field. It represents consensus within HCFA about what should be collected if the federal government were to collect encounter data. There is still disagreement, however, about what it is appropriate and necessary for the federal government to collect. HCFA will integrate comments from the field by the end of the year; by that time, it is hoped that the agency will have a position about the type of elements that should be collected by plans, states, and the federal government.



Mr. Friedman then briefly discussed the Information for State Health Policy Project, funded by the Robert Wood Johnson Foundation. Seven states received million-dollar grants to work on developing linkages with different data sets. Mississippi and South Carolina have been very successful in linking Medicaid data files with public health and vital statistics records. The goal now is to have other states accomplish something similar with their Medicaid and public health data.

Dr. Starfield asked about HCFA's plans for integrating its work with that of the National Committee, and Mr. Friedman said HCFA is still trying to get its own house in order. Dr. Ashley wondered what will happen if block grant provisions have no requirement for reporting back to HCFA. Mr. Friedman said the states are "desperate" for guidance about what data elements to collect, and concerned about what Medicare will ask for given that four to five million people are entitled to both Medicaid and Medicare. The task now, he said, is to "proselytize the value" of a national uniform data set. Large HMOs are eager for it because it would cut down on their overhead.

## **REPORTS OF SUBCOMMITTEE MEETINGS AND WORKPLANS**

"Resolved: That NCVHS recommend to the Secretary of DHHS that, in redesigning and restructuring the Committee, care be taken to assure that the Committee will continue to perform its essential functions of providing advice, consultation, assistance, and recommendations regarding the major national systems of health data collection that are currently in operation. These include the vital statistics system, the reportable diseases surveillance programs of CDC, and recurring health surveys such as the National Health Interview Survey, the National Hospital Discharge Survey, the National Medical Expenditure Survey, the National Health and Nutrition Examination Survey, the Medicare

Current Beneficiary Survey, and others.

The Committee also recommends that NCVHS continue to have at least one subcommittee that focuses on the health status, access to care, and frequency and quality of care received by members of racial and ethnic minority groups and low income populations in the U.S. The Committee further recommends that NCVHS continue to have at least one subcommittee that focuses on the health status, access to care, and services received by physically and mentally disabled populations in the U.S. The membership of NCVHS should include sufficient numbers of members with expertise and interest in these areas to allow these two subcommittees to function meaningfully."

### Subcommittee on Health Statistics for Minority and Other Special Populations

Confidentiality Monitor: Dr. Thompson reported that a provision in the Family Protection Act requiring written parental permission for any survey research done on children, after having been deleted, has been written back into the bill in both the House and Senate versions. The new version will be considered shortly. Mr. Scanlon said that the Department's John Fanning, who works on privacy and confidentiality issues, could work with the Committee on this matter. The Department has already gone on record against the provision and is proposing other ways to get at the same goal. Dr. Thompson asked if the Committee would like to "weigh in" on it, given the hindrances it would impose on research. Dr. Thompson was asked to work with Dr. Zill on a document for circulation to Committee members.

D. From Iris Shimizu, NCHS- the following article on the subject of DHHS survey integration by James Scanlon, DHHS, appeared in the most recent issue of the ASA Newsletter (Government Statistics Section): The Department of Health and Human Services (HHS) supports a number of

health surveys and data systems which form the foundation for the nation's ability to monitor the health of the population and the functioning of the health care system. To respond to critical data gaps and emerging health data needs, HHS has carefully evaluated its health surveys and has developed a survey integration plan. The goals of the plan are to improve the analytical capacity of HHS data surveys and systems, to address high priority data gaps, and to implement a survey framework in which HHS data activities are streamlined and rationalized. The Survey Integration Plan has several major goals, including: to implement a more rational, systematic strategy for collection of data on key health issues facing HHS; to fill a critical gap by producing annual estimates of health care expenditures, insurance coverage, and employer-related insurance costs; to continue to meet public health data needs now met through ongoing population and provider-based surveys within a framework that also allows for expansion to address currently unmet public health data needs; to enhance the analytic capabilities of HHS surveys, allowing multiple HHS data collection efforts to be linked analytically through the use of common core questionnaires, common sampling frames, and common definitions and terms; to reduce the overall burden imposed on HHS survey respondents below those imposed by independent surveys to meet the same data needs; and to achieve efficiencies in sampling, data collection, questionnaire design, and survey operations, allowing more of HHS' resources to be focused on meeting high priority data needs.

There are several key elements included in the HHS Survey Integration Plan. These include: redesigning and automating the National Health Interview Survey (NHIS) to serve as the sampling "nucleus" for many HHS population surveys; implementing an ongoing, longitudinal panel survey on insurance and expenditures-- the Medical Expenditure Panel (MEP). The 1996 MEP will be based on the NMES design and will use the

1995 NHIS as a sampling frame. The 1996 MEP would be introduced at a lower sample size than was planned for the 1996 NMES, and then would be increased in size to meet precision requirements as the study continues in 1997; consolidating HHS' surveys of employers so that the National Employer Health Insurance Survey and the insurance follow-up component to the expenditure survey (MEP) are jointly fielded; implementing joint field operations and common core questionnaires for HHS' major surveys of health care providers; redesigning the National Health and Nutrition Examination Survey so that it would be conducted using NHIS as its sampling frame for its next cycle, beginning in 1998; developing a conceptual framework for characterizing health care capacity and the public health infrastructure, and rationalizing and coordinating HHS's provider inventories, health workforce analyses, and public health infrastructure surveys; evaluating the issues involved in possibly coordinating the field operations and sampling of the National Household Survey on Drug Abuse with similar approaches in the NHIS; developing a modular design that will facilitate state-level estimates and provide a mechanism for states to "buy into" national survey efforts to meet their own needs; and implementing improved and more uniform policies regarding privacy, data access, public data release, and sharing among agencies, as well as policies to assure that new survey activities will be conducted through the consolidated framework.

E. Excerpts from February 28, 1996, Public Health Service, National Committee on Vital and Health Statistics, SUBCOMMITTEE ON MENTAL HEALTH STATISTICS, Washington, D.C.:

## **REPORT ON EPIDEMIOLOGICAL ALCOHOL SURVEY**

Dr. Grant explained that the National Longitudinal Alcohol Epidemiology Survey surveyed the noninstitutionalized U.S. population

using a multistage, stratified sample with oversampling for black persons and young adults. The total response rate was 90 percent. It produced the first estimates of alcohol and drug use disorders as determined by the DSM-IV, and also measured DSM-IV major depressive disorder, along with family history of alcoholism, major related medical conditions, treatment utilization, income, and other variables.

The prevalence of past-year alcohol use is 44 percent, down about 10 percent from 1988. This is due mostly to former drinkers' quitting rather than to an increase in abstainers. The usual patterns for age and gender obtain, with lower rates for females and older persons. Alcohol abuse and dependence is estimated at 7.41 percent of the population, or 15 million people, compared to 8.2 percent in 1988. Past-year prevalence for drug use disorder was 1.54 percent, lower than the National Comorbidity Survey found and similar to ECA rates. Most was due to cannabis and cocaine abuse and/or dependence.

The study also found that the rates of alcohol abuse and dependence and heavy drinking overall were not different for those on welfare and the general population. The same was true of drug use. The rates were slightly higher for AFDC, WIC and food stamp recipients than for persons on SSI and Medicaid.

Dr. Zill observed that the National Institute of Drug Abuse Household Survey found that AFDC recipients' illicit drug use was about twice as high as that of non-recipients, and he asked Dr. Grant to speculate on the reasons for the disparity between the two studies. She noted that NIDA and NIAAA define drug use differently -- the latter as 12 or more times in a year, and the former as any use. Dr. Zill also cited unpublished data from NIDA's National Pregnancy and Health Survey, which also show higher rates for AFDC recipients. Dr. Grant noted possible methodological sources for the differences, and agreed with Dr. Zill that the issue warrants further

study.

Dr. Manderscheid asked for her views on how the epidemiological work on drug and alcohol use and abuse should be handled in this era of survey integration. She discussed the need to integrate these two areas with each other and with mental health, noting that no agency currently has an integrated approach to the measurement of ADM statistics. She recommended having a separate agency to deal with ADM disorders, along with a single federal data collection agency to collect data on everything, using the best methodology and talent available. Now, both the data and the talent are fragmented.

## **OVERVIEW OF THE SURVEY OF INCOME AND PROGRAM PARTICIPATION AND DIRECTIONS FOR THE FUTURE**

Dr. Manderscheid introduced the next speaker, Jack McNeil of the Census Bureau. He explained that the Survey of Income and Program Participation (SIPP) is the only mechanism for understanding the full range of program involvement of a sample of the U.S. population. It periodically inducts new cohorts, illuminating the dynamics of program participation over time. Mr. McNeil is "the mainstay person at the Census Bureau on disability measures," and a pioneer in their inclusion in the 1980 and 1990 census cycles.

Mr. McNeil said the SIPP has a core that collects detailed information every four months on labor force activity, income reciprocity, program participation, and health insurance coverage. In the old design, the sample was broken into four pieces and topical modules were added in different waves. The 1993 panel had nine waves. There was overlap between the panels, allowing for larger sample sizes and different kinds of analysis.

There were no panels in 1994 and 1995, and the 1996 panel is just beginning, with a new design recommended by a National Academy of Sciences committee. The new design focuses on longitudinal factors, and will have no overlap.

Although this was to allow for a much larger panel, funding problems have resulted in cuts in the sample size to 37,000. There are supposed to be 12 waves, through the end of 1999, although the recent furlough resulted in a two-month delay.

SIPP is an extremely rich data set, with a huge number of variables. In addition to the core, the 1993 panel had topical modules on reciprocity history, employment history, disability history, education and training, and other factors. Mr. McNeil offered to share the questions with the Subcommittee.

He referred the Subcommittee to the disability items in wave three of the 1993 panel, which are similar to those in two other waves described in the report "Americans with Disabilities." He stressed that there is now an opportunity to influence the content of the topical modules in the 1996 panel. The first disability topical module will be asked between June and September, 1997, and work has begun on its content. Those who wish to serve on the interagency committee should contact him. The complete data set can be used to study many issues, such as the relationship between work and disability.

Dr. Zill shared the Subcommittee's thoughts about the desirability of having items concerning functional status limitations in managed care and other information systems, and he asked for Mr. McNeil's suggestions. The Subcommittee is also concerned that the episodic nature of many mental health conditions is not well captured by standard disability questions. Mr. McNeil responded that the Census Bureau, too, is struggling with this issue, for the year 2000 Census long form as well as for the American Community Survey.

As to the future of SIPP, he said the current plan is to go ahead with a single, non-overlap survey. The main concern is the possible need to serve as the official source of income and poverty estimates, which might lead to major changes and

affect series that go back to the late 1940s. He noted the irony that the new design is not ideal for annual estimates of median family income, possibly making it necessary to return to an overlapping design. Dr. Zill noted a concern about facilitating secondary analysis.

Asked about racial and minority population estimates, Mr. McNeil said SIPP is satisfactory for most purposes, although it only reports in the major OMB categories. The current panel does not over-sample blacks or Hispanics.

Dr. Zill thanked him for his presentation and his past work on disability. Dr. Manderscheid added that SIPP will be very important as AFDC, Medicaid and Medicare programs are reinvented. It provides the only data whereby changes can be discerned in the underlying covered populations and the severity of their problems. SAMHSA is very concerned about how changes in AFDC will affect Medicaid coverage, especially for children, and it has "a very strong vested interest in this survey."

#### **NEXT GENERATION OF MANAGED CARE: QUALITY/REPORT CARD, FUTURE CMHS SURVEY ACTIVITIES**

Turning to the subject of managed care in respect to behavioral health, Dr. Manderscheid characterized it as "radically different" now than it was just a few months ago. Two major trends are the entry of traditional providers, who are organizing their own managed care activities, and the ascendancy of integrated delivery systems. The integration includes mental health and substance abuse with primary care.

Managed care continues to grow, now covering 120 million lives in behavioral health care. About 32 to 35 states have waivers to move their Medicaid systems to managed care, some including mental health and (a smaller number) substance abuse. Carve-in programs are increasingly common for all but the most severe populations, with the private sector moving toward

carve-in and the public sector toward carve-out. The major organizational model is the HMO (rather than the network), in which the full spectrum of care is organized under an HMO umbrella, sometimes with specialized longer-term care provided through subcontracts.

Dr. Manderscheid then discussed developments in respect to quality, involving both standards of care and measurement. The first task, he said, is to "bring managed care into the public health model" by developing ways to look at managed care constituents in relation to the broader populations of which they are a part. This has traditionally not been done by managed care, and it cannot be done without population-based epidemiological needs assessment data. By the same token, the public health model must be brought to mental health and substance abuse.

#### **DISCUSSION OF CHILDREN'S QUESTIONS ON NATIONAL HEALTH INTERVIEW SURVEY**

Dr. Zill noted that for the children's questions, the NHIS will use a small number of items identified in the Achenbach Report as the most discriminating of clinical status among the 120 items in the overall inventory. He expressed concern that used alone, these items may behave differently than when embedded in a longer inventory, and he recommended that the Center do some methodological work to determine how they behave before permanently institutionalizing them.

Dr. Madans outlined the timetable and said that no changes can be made after the end of April. The first use in the field will be in July. NCHS is flexible about new questions, however. She added that the principle problem now is that the new questionnaire, which they had hoped would be shorter, has proved to be significantly longer than its predecessor. Various solutions and adjustments are under consideration. On another matter, she said that the new design is much better for state estimates. NCHS hopes to get funding to develop a prototype for an RDD state supplement to the HIS, something in which CDC is very interested, so it can run state-based surveys.

Turning to self-reported health status, Dr. Madans said health status would probably remain in the family core until a Year 2000 Objectives end product is produced; then it might be moved to the sample person core to assure self-response. She added that the limitation of activity questions will probably change then, as well. The group discussed disability questions, role functioning and the Disability Supplement, and she said NCHS hoped to release the data set on Phase One this spring. Dr. Manderscheid commented on the importance of that survey, the first national disability survey in more than 20 years. The follow-on, which is not yet fully funded, is also critically important. Dr. Madans described the advantages that will be gained from the conversion to CAPI in terms of making future adjustments to surveys. Automation has been a department-wide effort.

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**Early Summer '96...stay in GIS touch and take a moment to send a warm note of welcome to Edward J. Sondik, PhD, (new) Director, NCHS**